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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| NXP, B.V. NXP INTELLECTUAL PROPERTY DEPARTMENT M/S41-SJ 1109 MCKAY DRIVE SAN JOSE, CA 95131 | | | EXAMINER HOQUE, FARHANA AKHTER | |
| | | | ART UNIT 4176 | PAPER NUMBER |
| | | | NOTIFICATION DATE 03/18/2009 | DELIVERY MODE ELECTRONIC |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

Office Action Summary

Application No.

10/587,442

Applicant(s)

AMATO, JOSEPH M.

Examiner

FARHANA HOQUE

Art Unit

4176

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 7/25/2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/ISD)
- Paper No(s)/Mail Date 7/25/2006

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

This Office Action is in response to the Applicant's communication filed on 8/15/2007. In virtue of this communication, claims 1-15 are currently presented in the instant application.

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 7/25/2006 was filed in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119 (a)-(d), which papers have been placed of record in the file.

Drawings

3. The drawings were received on 7/25/2006. These drawings are accepted.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-5 and 13-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Look et al. (U.S. Patent No. 6,393,714 B1).

With respect to claim 1, Look et al. discloses a structure comprising at least one proportional variable resistor [115] (see Fig. 2) suitable for electrically measuring unidirectional misalignment of stitched masks in etched interconnect layers [105, 110] (see Fig. 1A *termed as conductive element), said structure comprising at least a first mask [120] (see Fig. 1B) and a second mask (it is inherent that Look et al. teaches a second mask being present due to the superimposing of the first mask) that when superimposed comprise at least two test pads [150,155] (see Fig. 2 *termed as test terminals) and interconnects the resistance between which can be measured [115] (see Fig. 2).

With respect to claim 2, Look et al. discloses the invention according to claim 1 comprising at least one directly proportional variable resistor [115] (see Fig. 2; also col. 2, lines 10-13).

With respect to claim 3, Look et al. discloses the invention according to claim 1 comprising at least one inversely proportional variable resistor (col. 4, lines 63 - col. 5, lines 1).

With respect to claim 4, Look et al. discloses the invention to claim 1 comprising at least one stick type interconnect [105] (see Fig. 1A *termed as conductive element).

With respect to claim 5, Look et al. discloses the invention according to claim 1 comprising at least one hook type interconnect [110] (see Fig. 1A *termed as conductive element).

With respect to claim 13, Look et al. discloses a method of measuring stitched mask misalignment in etched interconnect layers [105, 110] (see Fig. 1A *termed as conductive element) comprising the steps of: providing a reference mask [120] (see Fig. 1B) comprising at least two test pads [150, 155] (see Fig. 1A *termed as test terminals); providing a second mask (it is inherent that Look et al. teaches a second mask being present due to the superimposing of the first mask) comprising at least one interconnect [105] (see Fig. 1A *termed as conductive element); superimposing said reference mask [120] (see Fig. 1B) and said second mask (it is inherent that Look et al. teaches a second mask being present due to the superimposing of the first mask) to provide at least one proportional variable resistor [115] (see Fig. 2); electrically measuring the resistance of said at least one proportional variable resistor [115] (see Fig. 2; col. 2, lines 10-13).

With respect to claim 14, Look et al. discloses the method according to claim 13 further comprising the step of establishing an optimum resistance between said test pads (see Fig. 3; also col. 5, lines 21-27).

With respect to claim 15, Look et al. discloses the invention according to claim 14 comprising the further steps of comparing a measured resistance to said optimum resistance and adjusting the position of said masks to alignment (col. 5, lines 50-56).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
8. Claims 6-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Look et al. (U.S. Patent No. 6,393,714 B1) in view of McMurtry (U.S. Patent No. 4,153,998).

With respect to claim 6, Look et al. discloses a system for electrically measuring unidirectional misalignment of stitched masks in etched interconnect layers [105, 110] (see Fig. 1A *termed as conductive element), said system comprising at least one proportional variable resistor [115] (see Fig. 2) comprising a reference mask [120] (see Fig. 1B) comprising at least two test pads [150, 155] (see Fig. 2 *termed as test terminals) and a second mask (it is inherent that Look et al. teaches a second mask being present due to the superimposing of the first mask) comprising at least one interconnect [105] (see Fig. 2 *termed as conductive element);

Look et al. does not disclose a probe for testing the resistance between said interconnect of said reference mask and said interconnect of said second mask when said masks are superimposed.

McMurtry discloses a probe for testing a resistance between an interconnect of a reference mask and an interconnect of a second mask when said masks are superimposed [1] (see Figs. 1; also col. 2, lines 31-35).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Look et al. by additionally arranging a probe as taught by McMurtry for determining at what point in space contact is established between a stylus and an object (see col. 1, lines 8-12).

With respect to claim 7, the combination of Look et al. and McMurtry discloses the invention according to claim 6, the at least one interconnect of said reference mask [120] (see Fig. 1B) comprising at least one stick type interconnect [105] (see Fig. 3 *termed as conductive element).

With respect to claim 8, the combination of Look et al. and McMurtry discloses the invention according to claim 6, the at least one interconnect of said reference mask [120] (see Fig. 1B) comprising at least one hook type interconnect [110] (see Fig. 3 *termed as conductive element).

With respect to claim 9, the combination of Look et al. and McMurtry discloses the invention according to claim 6, the at least one interconnect of said second mask (it is inherent that Look et al. teaches a second mask being present due to the superimposing of the first mask) comprising at least one stick type interconnect [105] (see Fig. 3 *termed as conductive element).

With respect to claim 10, the combination of Look et al. and McMurtry discloses the invention according to claim 6, the at least one interconnect of said second mask (it is inherent

that Look et al. teaches a second mask being present due to the superimposing of the first mask) comprising at least one hook type interconnect [110] (see Fig. 3 *termed as conductive element).

With respect to claim 11, the combination of Look et al. and McMurtry discloses the invention according to claim 6, said system comprising at least one inversely proportional variable resistor (col. 4, lines 63 – col. 5, lines 1).

With respect to claim 12, the combination of Look et al. and McMurtry discloses the invention according to claim 6, said system comprising at least one directly proportional variable resistor [115] (see Fig. 2).

Citations of Pertinent Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ausschnitt (U.S. Patent No. 4,437,760) discloses a reusable electrical overlay measurement circuit and process.

Boulin (U.S. Patent No. 4,386,469) discloses an electrical measurement of level to-to-level misalignment in integrated circuits.

Thomas (U.S. Patent No. 3,808,527) discloses an alignment determining system.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to FARHANA HOQUE whose telephone number is (571)270-7543. The examiner can normally be reached on Monday - Friday 7:30-5:00pm, Alternate Friday's Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thuy V. Tran can be reached on (571) 272-1828. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

F.H
3/9/2008

/Thuy Vinh Tran/
Supervisory Patent Examiner, Art Unit 4176
03/15/09

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